U. S. DEPARTMENT OF AGRICULTURE,

BUREAU OF SOILS.

IN COOPERATION WITH THE ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES.

SOIL SURVEY OF CRENSHAW COUNTY, ALABAMA.

BY

J. F. STROUD, OF THE ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES, IN CHARGE, AND L. R. SCHOENMANN, HOWARD C. SMITH, AND C. B. MANIFOLD, OF THE U. S. DEPARTMENT OF AGRICULTURE.

[Advance Sheets—Field Operations of the Bureau of Soils, 1921.]

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[PUBLIC RESOLUTION—No. 9.]

JOINT RESOLUTION Amending public resolution numbered eight, Fifty-sixth Congress, second session, approved February twenty-third, nineteen hundred and one, "providing for the printing annually of the report on field operations of the Division of Soils, Department of Agriculture."

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That public resolution numbered eight, Fifty-sixth Congress, second session, approved February twenty-third, nineteen hundred and one, be amended by striking out all after the resolving clause and inserting in lieu thereof the following:

That there shall be printed ten thousand five hundred copies of the report on field operations of the Division of Soils, Department of Agriculture, of which one thousand five hundred copies shall be for the use of the Senate, three thousand copies for the use of the House of Representatives, and six thousand copies for the use of the Department of Agriculture: *Provided*, That in addition to the number of copies above provided for there shall be printed, as soon as the manuscript can be prepared, with the necessary maps and illustrations to accompany it, a report on each area surveyed, in the form of advance sheets, bound in paper covers, of which five hundred copies shall be for the use of each Senator from the State, two thousand copies for the use of each Representative for the Congressional district or districts in which the survey is made, and one thousand copies for the use of the Department of Agriculture.

Approved March 14, 1904.

[On July 1, 1901, the Division of Soils was reorganized as the Bureau of Soils.]

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SOIL SURVEY OF CRENSHAW COUNTY, ALABAMA.

By J. F. STROUD, of the Alabama Department of Agriculture and Industries, in Charge, and L. R. SCHOENMANN, HOWARD C. SMITH, and C. B. MANIFOLD, of the U. S. Department of Agriculture.

DESCRIPTION OF THE AREA.

Crenshaw County lies in the southern part of Alabama, only one county lying between it and the Florida line. The northern end of the county is about 25 miles south of Montgomery, the State capital. The county is long and comparatively narrow, having a dimension of 42 miles north and south and 21 miles east and west. It has an area of 605 square miles, or 387,200 acres.

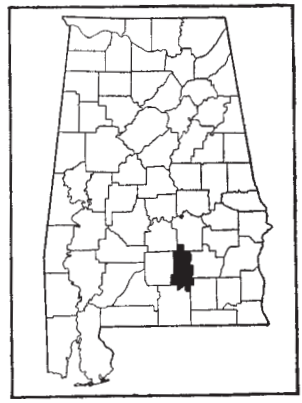


FIG. 16.—Sketch map showing location of the Crenshaw County area, Alabama.

The surface of Crenshaw County varies from flat, undulating, gently rolling, or rolling, to hilly and broken. The country of undulating or gently rolling topography is developed largely in the central and west-central parts of the county, on the broad interstream areas. Some of the smoothest areas of upland border the second bottoms, on what is known as the northern escarpment of Patsaliga Creek and Conecuh River. Extending across the northwest corner of the county in T. 12 N., R. 17 E., is a prominent physical feature known as the Chunnenuggee Ridge. This ridge embraces not only the highest elevations in the county, but has a rough, broken, hilly, and eroded surface and constitutes by far the roughest land in the county. Other areas of rough and hilly land form the bluffs on the south side of Patsaliga Creek and Conecuh River. Along the rivers and larger creeks are fairly wide first bottoms and in many places well-defined second bottoms and terraces; particularly are these noticeable west of Luverne and west of Brantley. These first bottoms and terraces include the flattest and most nearly level areas in the county.

The general slope of Crenshaw County is prevailingly to the south and southwest, the direction of flow of the rivers and larger creeks. The highest point is in the northern township, where an elevation of 659 feet above sea level is reached. Lapine and Luverne, with elevations of 438 feet and 350 feet, respectively, are the towns of highest elevation. Glenwood has an elevation of 286.2 feet; Brantley 284.1 feet; Dozier, 235.2 feet; and Searight, 224.1 feet.

All the county, except the first bottoms and some of the flatter and lower lying second bottoms, is well drained. In many parts of the county, particularly in the northwest corner and in the country immediately to the south of Patsaliga Creek and Conecuh River, the run-off is excessive and erosion is pronounced. Every farm in the county is connected with streams or with intermittent or wet-weather branches, and ditching is necessary only on the flatter bottoms. On the other hand, terracing is essential and is practiced by nearly all farmers to prevent washing.

The drainage of the county, except that in the extreme northwestern corner, which flows to the Alabama River, is to the south and southwest into Patsaliga Creek and Conecuh River. The northern, central, and southwestern parts are drained by the Patsaliga Creek. The Conecuh River drains the southeastern third of the county. These streams are rather sluggish, but many of the larger branches are swift flowing and are fed by numerous springs, especially where they head in the sandy soils. There are a few power mills along some of these creeks, and much more power could be developed on them, and perhaps some on the Patsaliga. Along the Central of Georgia Railway, from Glenwood to Searight, there are a number of flowing wells that range in depth from 300 to 600 feet and furnish a good supply of water.

Crenshaw County was formed by act of legislature in 1865. The territory was taken from parts of Montgomery, Butler, Pike, Lowndes, Coffee, and Covington Counties. The people who settled this part of the country came from Georgia, South Carolina, and the older settled States to the north. The population of the county, according to the 1920 census, is 23,017, all of which is rural, there being no towns of more than 2,500 inhabitants. The average density of the population is about 38 persons per square mile. The number of whites is 15,902 and of negroes 7,115. There are practically no foreign-born residents. The county is most thickly settled in the central part, within a radius of 6 miles of Luverne, and northwest to Black Rock and Honoraville. The Orangeburg, Luverne, Greenville, and Ruston soils are most densely populated, while the Susquehanna fine sandy loam and clay are thinly settled, mainly by negroes and tenant farmers. Luverne, the county seat and largest town, has a population of 1,464, Brantley has a population of 702, and Dozier 237. There are a number of smaller towns and railway stations.

The railroad transportation facilities for the eastern side and the southeastern part of the county are good. The western side of the county is 12 miles or more from any railroad. The Columbus-Andalusia branch of the Central of Georgia Railway crosses the southeastern part of the county, passing through Glenwood, Brantley, Dozier, and Searight. The Montgomery and Luverne branch of the Atlantic Coast Line extends from Luverne to Sprague in Montgomery County, where it connects with the Montgomery and Savannah division of the same system.

A good highway leads from Montgomery to Andalusia, in Covington County, through Highland Home, Luverne, and Brantley. The rest of the public roads of the county are in bad repair. By grading and straightening many of the main roads and putting on a surface of sand-clay material, a fairly good system of highways can be maintained.

Churches and schools are well distributed throughout the county. Rural delivery of mail is in operation throughout all parts. There are no rural telephone systems in the county, but the towns along the railroads have local and long-distance connections.

Montgomery and Andalusia furnish markets for most of the hogs and cattle, while the cotton, corn, peanuts, and velvet beans are sold to local buyers and later shipped out to various markets. Some income is derived from the sale of lumber, which is cut at several small mills in the county. With the exception of the few sawmills and a cottonseed-oil mill at Luverne, there are no manufacturing industries of importance within the county.

CLIMATE.

The climate of Crenshaw County is not only suited to a widely diversified agriculture, with certain crops growing in the field the year around, but those who till the soil find it equally suitable to their health and comfort. The summers are long, with periods of high temperature, but even during the four hottest months, June, July, August, and September, the mean monthly temperature seldom exceeds 80° F. The winters are short and mild. An occasional cold wind from the north causes the temperature to drop suddenly at times, although the cold "snaps" seldom last more than 1 to 3 days. Zero weather is almost unknown in this section, and 20° to 25° F. is about the minimum temperature. January and February are generally the coldest and most disagreeable of the winter months, but the weather moderates so that corn planting is usually begun by the first of March.

Cotton is planted from about the middle or latter part of March to the first of May. Pastures and most kinds of native vegetation are usually well started by the middle of February. Fall-sown oats, rye, clovers, and vetch remain green the entire winter. The growth is seldom entirely checked, and then only for a few days at a time. By growing these crops it is possible to have grazing for cattle throughout the year.

The mean annual precipitation is about 50 inches, with a summer mean of about 15 inches. The rainfall is well distributed through the year, with the fall mean lowest, which is especially favorable for harvesting crops. The rainfall is adequate for all crops grown in the area, if proper attention is given to the tillage of the soil to conserve moisture. Cover crops should be used to prevent washing and leaching of the soil during the winter months, when the precipitation is usually heavy. These crops, turned under as green manure in the spring, would not only enrich the soil, but would increase its water-holding capacity.

The average date of the last killing frost in spring is March 12 and of the first in the fall November 18. The date of the earliest severe frost in recent years is October 28 and of the latest in spring April 6.

There is an abundance of good water supplied from artesian wells, springs, or dug wells, and in general the conditions favor the development of a very profitable and widely diversified agriculture.

The following table shows the mean annual, seasonal, and monthly temperature and precipitation, as recorded by the Weather Bureau station at Highland Home, in the northern part of the county. The data given represents fairly well the climatic conditions through the county.

Normal monthly, seasonal, and annual temperature and precipitation at Highland Home.

Month.	Temperature.			Precipitation.		
	Mean.	Absolute maximum.	Absolute minimum.	Mean.	Total amount for the driest year (1897).	Total amount for the wettest year (1912).
	°F.	°F.	°F.	Inches.	Inches.	Inches.
December	49.0	79	10	4.61	2.56	7.00
January	49.0	80	11	4.45	1.75	8.29
February	49.9	84	−4	5.56	6.32	6.06
Winter	49.3	84	−4	14.62	10.63	21.35
March	59.6	92	22	6.09	8.12	11.04
April	65.0	96	31	3.96	4.07	10.38
May	72.9	99	40	3.59	.20	1.62
Spring	65.8	99	22	13.64	12.39	23.04
June	78.6	105	50	4.40	1.57	6.60
July	79.9	103	58	5.29	2.81	2.24
August	79.7	100	55	4.88	8.01	6.84
Summer	79.4	105	50	14.57	12.39	15.68
September	76.3	98	45	2.37	1.24	4.22
October	66.4	97	30	2.38	1.74	2.24
November	57.2	88	18	3.12	.50	3.59
Fall	66.6	98	18	7.87	3.48	10.05
Year	65.4	105	−4	50.70	38.89	70.12

AGRICULTURE.

Beginning with the early settlement of the country now included in Crenshaw County, its growth and development have come from its agricultural resources. The county was originally heavily forested with longleaf, loblolly, and shortleaf pines. The revenue obtained from turpentine and lumber enriched those who participated in the profits, but these industries, through their devastation of the forests, have decreased rather than increased the assets of the county, especially upon those lands, such as the rough broken areas and some of the deeper sands, which are not particularly adapted to general farming. The agricultural development of the county has always been gradual. With the introduction of the power gin, cotton became the cash crop, and since that time its production has gradually increased until restricted by the boll weevil. The early settlers produced corn, wheat, oats, hay, and vegetables, and in addition considerable pork, beef, and mutton. The crops grown by the early settlers were consumed largely at home, as there were no railroads or other means of coveniently transporting the heavy products to the distant markets.

In 1880 the principal crops were corn, with an acreage of 28,999; cotton, 26,962 acres; and oats, 5,208 acres. Sugar cane, sweet potatoes, rice, tobacco, wheat, and rye also were grown. By 1890 the production of cotton had increased about 50 per cent, and peanuts were grown that year on 635 acres. The returns for 1900 show a great increase during the preceding decade in the acreage of corn, cotton, peanuts, and cowpeas and in the production of hay and forage crops. There were 45,458 acres of corn, 2,578 acres of cowpeas, 3,258 acres of peanuts, 47,320 acres of cotton, and 1,187 acres of sugar cane. There was a noticeable decrease in the proportion of farms operated by the owners and a corresponding increase in the proportion operated under the tenant system. Practically the only notable changes in the next decade were in the acreage of cotton, which had reached 59,833 acres in 1909, and a substantial increase in the acreage of peanuts and cowpeas; also about this time velvet beans became a popular crop.

The boll weevil, which appeared in Crenshaw County about 1914, has had an important influence on the agriculture. The weevil became very destructive in 1915, and has continued so since that time. As a result the acreage of cotton has been reduced from about 60,000 acres in 1909 to about 30,000 acres in 1919, and the production has decreased from about 20,000 bales to about 8,000 bales during the same period. This reduction in the cash crop of the county has caused the farmers to look to other crops which could be substituted as cash crops, and as a result the production of peanuts, velvet beans, corn, sweet potatoes, sugar cane, and hay crops has been greatly increased.

At present the agriculture of Crenshaw County consists of the production of cotton, peanuts, velvet beans, and sugar cane as cash crops, and of corn, cowpea hay, peanut hay, oats, and a few other forage crops as the principal subsistence crops. A considerable number of hogs and cattle are raised and shipped to outside markets.

Corn is the most important crop in the county. The census reports 67,529 acres in corn in 1919, with a production of 779,860 bushels. Corn is grown more or less on every farm. It is the principal feed for work stock and hogs, and much of it is ground into meal for home use. After these needs are supplied, there is a considerable surplus which is shipped out of the county.

Cotton is the second crop in importance and still remains the principal cash crop. While the acreage has been reduced at least one-half or to about 30,000 acres, since 1915, and the yields to about one-third of the earlier production, this crop is still grown on most farms because it is readily convertible into cash.

Peanuts are third in importance and constitute a valuable cash crop. They were grown on 15,714 acres in 1919, with a production of 315,497 bushels. The greater part of the crop is sold, and the rest is used for fattening hogs—that is, the crop is "hogged off." The vines are excellent feed for work stock, and sometimes the nuts are also fed. The principal variety is the Virginia Runner; a few Spanish are grown.

The velvet bean is next in importance, with an estimated acreage of about 13,000 acres. A part of the seed crop is harvested and sold to local buyers. Much of the crop is grazed after maturity by cows and

other stock, the crops giving good grazing during the fall and winter months. Nearly all the farmers plant velvet beans with the corn. The beans constitute not only a forage and cash crop, but also a soil improver that fits well in the scheme of diversification and rotation of crops.

Sugar cane occupied 674 acres in 1919, yielding 90,210 gallons of sirup. This crop is important as furnishing the home with sirup, and on many farms there is a surplus to sell. The sirup produced is of a bright color and has an excellent flavor. If a uniform grade or standard brand of sirup were manufactured and put in cans, a better price and an easier market could be obtained for this product. This could be easily accomplished through community organizations having the latest improved evaporators.

The crops of secondary importance include sweet potatoes, oats, and cowpeas. Sweet potatoes are grown by practically every farmer for home use, and many farmers grow an acre or more, selling the surplus in the local markets. If potato-curing plants were established at various places in the county, more potatoes could be grown, and these could be marketed at different times during the year, when the demand and prices are the best. Cowpeas and oats are grown principally for forage. A small acreage is devoted to the production of tobacco, which is shipped out of the county. In the vicinity of Dozier nearly every farmer grows from one-half acre to 2 acres of cucumbers, which are sold to the salting station at Dozier and later shipped to a pickling plant.

In addition to the crops already mentioned, garden vegetables are grown in considerable variety for home use. There are a few peach, apple, and fig trees and grapevines on most of the better farms, but no attempt is being made to grow these fruits on a commercial scale. There are nearly 9,000 pecan trees in the county, many of them of bearing age, the production in 1919 being 36,468 pounds. More trees are being planted.

Hogs are raised on every farm. Most of them are slaughtered for home use, but some are shipped to markets outside the county. Some of the animals are purebred, the Poland-China, Jersey, Essex, Berkshire, and Hampshire breeds being represented, but the greater number are common stock or grades.

Milk cows are kept on every large farm for supplying milk and butter for home use, and on a few of the larger farms some beef cattle are raised and shipped to markets outside the county. The cattle are pastured the year round, generally with a supplementary feed of roughage during the winter months. Under the conditions milk can be produced cheaply, and there appears to be no reason why milk and cream should not be sold from many farms or even a small creamery established in the county. This would add a cash income distributed throughout the year.

Poultry and eggs are produced in a small way on most farms. The production in 1919 had a value of about $160,000. About half of this is sold during the year to traveling buyers and in the local markets.

The farmers of Crenshaw County recognize that the Ruston and Orangeburg sandy loams and fine sandy loams and the Luverne fine sandy loam are well suited to corn, cotton, peanuts, velvet beans,

sweet potatoes, peas, fruits, and garden truck. The Susquehanna fine sandy loam is considered best suited to cotton and is less favored for the general farm crops than the fine sandy loams of the three series first mentioned. The Susquehanna clay is considered best for forestry and pasture and very little of it is under cultivation. The Sumter clay is highly prized as hay and pasture land, it being the natural soil for the production of alfalfa, melilotus, and Johnson grass. The Greenville and Blakely soils are considered the best cotton soils in the county. Under boll-weevil conditions the sands, loamy sands, and fine sands are considered less desirable for the production of cotton, but these can be used profitably for the growing of peanuts, velvet beans, and peas. The soils best suited to the growing of sugar cane are the Kalmia fine sandy loam, the land locally called "made land," which is mapped as Meadow, and the lower slopes of the sandy uplands. The Norfolk fine sand and the Kalmia fine sand are the types best suited for the production of cucumbers and watermelons. The Catalpa clay is an excellent soil for corn and Johnson grass.

In the preparation of land for corn, cotton, and other intertilled crops there is practically no fall plowing, but nearly all the plowing is done in the latter part of winter or in early spring. The fields are left bare and unprotected during the winter. The old cotton or corn stalks are generally broken down with a stalk cutter before the land is plowed. The depth of the plowing ranges from about 3 to 6 inches, which is altogether too shallow for any of the soils, except possibly the sands and loamy sands. Some of the land is plowed flat, but most of it is simply bedded on the old middle or water furrows. The land is always bedded for cotton, which is planted on the ridge; corn is planted in the water furrow. Cotton receives from three to five cultivations during the growing season, corn is usually cultivated three times and peanuts twice. No definite system of crop rotations is followed.

Commercial fertilizer valued at $208,277 was used on 2,889 farms, or nearly four-fifths of the total number, during 1919. This fertilizer was purchased at the time of high prices of both it and farm products. In the present year (1921), it is estimated, not more than one-third as much will be used. This decrease, which is due to economic conditions, is believed to be temporary. About half the farmers use a fertilizer of a 10–2–2[1] grade; a few use 8–4–4 or 9–3–3 mixtures. A popular home mixture consists of half acid phosphate and half cottonseed meal, but some prefer a mixture composed of one-third meal and two-thirds acid phosphate. Fertilizer is applied at the rate of about 200 to 600 pounds per acre, irrespective of its composition. Sometimes 75 to 100 pounds of nitrate of soda is used as a top dressing for cotton and corn.

The work stock consists principally of mules of light to medium weight, which are used for the ordinary farm work. On a few farms a horse is kept for riding or driving and is sometimes used for farm work. Some oxen are used for hauling logs and lumber.

[1] Percentages, respectively, of phosphoric acid, nitrogen, and potash.

There is very little improved farm machinery in use in the county, although the friable character of the soil and the favorable surface invite its use. Practically all the breaking is done with 1-horse turning plows, only a few heavier or 2-horse plows being used. Planters, sweeps, and shovels of 1-horse draft are in common use. Power threshing machines travel over the county to thresh the peanuts.

The barns generally are small and poorly constructed. Stored corn is not well protected from destruction by rats and weevils. Practically air-tight cribs or bins should be constructed for the storage of corn in order that carbon bisulphide may be used to kill the weevil. Probably 5 to 10 per cent of the corn in storage is annually destroyed by this insect.

Approximately 40 per cent of the fields on the farms are fenced with various kinds of wire. The pastures comprise abandoned fields, woodlots, or more generally the first-bottom lands along the streams. There is some kind of pasture on every good farm, but the grasses are mainly native. Much better pastures could be had on many of the farms by seeding them and giving them proper treatment.

At present there is no scarcity of farm labor in the county. The laborers are drawn from both white and colored races. Cotton is picked by hand at an average price of about 50 cents per 100 pounds. The labor cost for harvesting velvet beans is about 40 cents per 100 pounds. Most of the farm labor is done by the farmer and members of his family.

The census of 1920 reports 74.6 per cent of the area of the county in 3,675 farms.[2] The average size of farms is given as 80 acres, of which about half is improved land. The individual farms range in size from about 40 to 160 acres, with a few that are much larger. A lumber company owns several thousand acres in the western part of the county.

According to the 1920 census, 44.3 per cent of the farms were operated by owners, 55.4 per cent by tenants, and 0.3 per cent by managers. The percentage of farms operated by tenants has increased from 34.6 per cent in 1880 to 55.4 per cent at present. Land is rented for cash or on shares. The cash rent is commonly $75 per plow (usually about 30 acres). Under the share plan the landowner generally receives one-third of the corn and one-fourth of the cotton grown on the land.

The prices of land in the county range from $3 an acre for the rough lands, fit only for forestry and pasture, to $50 an acre for the best improved farms near Luverne. The average price of ordinary farm land at a reasonable distance from town or railroad is about $20 to $25 an acre, while some of the more sandy soils can be purchased for $10 to $15 an acre.

Crenshaw County offers excellent opportunities to the homeseeker. There is considerable undeveloped land, and even much of the improved land can be purchased at reasonable prices. Many of the soils here are similar in every respect to soils in other counties in this general region which are held at much higher prices. The soils are adapted to a wide variety of crops, and therefore are suited for diversified farming.

[2] The census enumerates each tenancy as a farm.

SOILS.[3]

Crenshaw County lies in the Coastal Plain region of the State, and the soils are representative of large areas throughout the southern part of the State. The soils of Crenshaw County are prevailingly light in color, ranging from extensive areas of light-gray or brownish-gray to small areas of reddish-brown to red soils. These soils are dominantly low or decidedly deficient in organic matter, except in a few patches of Blakely loam and some of the Ochlockonee clay loam. The conditions have not favored the accumulation of vegetable matter, as this county was in forest prior to its reclamation for agriculture. In the forested areas, however, there is a noticeable amount of vegetable matter present as a superficial covering or more or less mixed with the first inch or two of the soil, but even this disappears after two or three years of cultivation. The Sumter clay mapped in the northwest corner of the county was developed under prairie conditions, but here erosion has been active and the soil mantle has been continually changing, and there is very little organic matter in the soil.

All the soils are practically neutral or slightly acid in character, except the Sumter clay and Catalpa clay, which are derived from calcareous material. Even in these there is no accumulation of lime carbonate, and the presence of lime in the soils is due to the fact that they contain some of the unleached parent material. It would be impossible for free carbonates to form in the soils of this county because of the heavy rainfall and excellent natural surface and internal drainage. Most of these soils, however, will respond to liberal applications of lime, particularly when organic matter has been supplied.

There are many different soils in Crenshaw County, and these range in texture and structure from loose sands to heavy clays in both the soils and subsoils. The various soils occur to a greater or less extent throughout the county, but some of them predominate in certain localities. The lightest textured and lightest colored soils and those which have an open porous structure throughout the 3-foot section are the sands, loamy sands, and fine sands of the Norfolk and Ruston series. These soils comprise what are generally termed the deep sands of the county and have their greatest development in the extreme southeastern corner, west of Brantley and south and southeast of Saville. These soils, owing to their porous structure and excellent drainage, are the most thoroughly leached soils in the county.

The largest and most important group of soils in this county is the group of gray to light-brown soils belonging to the Ruston, Orangeburg, and Luverne series. Soils of these three series constitute the principal agricultural lands of the county. While they have a generally broad distribution, some of the more prominent areas are in the central part of the county, north of Honoraville and north, west, and east of Luverne.

[3] The soils of Crenshaw County, Ala., do not join well with those of Montgomery and Butler Counties, which were surveyed many years ago. These differences are due to a better understanding of the soils of this region, resulting in changes in classification. The soils of Crenshaw County join fairly well those mapped in Lowndes, Pike, and Coffee Counties.

In the extreme northwest corner of the county there is an area of about 6 square miles of the Selma chalk formation, which has been exposed by erosion. The weathering of this formation has given rise to the only calcareous soils in the county, an upland type and an alluvial type. The former is in many places shallow, the parent rotten limestone lying within a few inches to 3 feet of the surface.

There is another small but distinct group of soils, occurring south of Luverne and southeast of Honoraville. These soils comprise the typical red lands of the county and are a part of its most productive land. This group includes soils of the Greenville and Blakely series.

The soils of the terraces and first bottoms form another important group. The types are prevailingly light colored, even the first-bottom soils being comparatively low in organic matter, that constituent giving in most cases soils of dark color.

The various soils of the county have been grouped together into soil series according to color, structure, origin, topography, and drainage conditions. The soil series are divided into soil types on the basis of texture—that is, according to the proportion of coarse and fine soil particles in the surface soil. The upland soils are included in the Ruston, Norfolk, Orangeburg, Greenville, Blakely, Luverne, Susquehanna, Kirvin, Sumter, and Guin series.

The Ruston series has gray to light-brown surface soils and a reddish-yellow or yellowish-red, or in a few places a mottled light-red and yellow, friable sandy clay or sand subsoil. The subsoil is intermediate in color between the yellow of the Norfolk subsoil and the bright red of the Orangeburg subsoil. The Ruston sand, loamy sand, sandy loam, and fine sandy loam are mapped.

The Norfolk series has light-gray to brownish-gray surface soils and a light-yellow to deep-yellow friable sandy clay or sand subsoil. Three types—the sand, fine sand, and fine sandy loam—are shown on the map.

The Orangeburg soils have grayish-brown to brown surface soils and a bright-red friable subsoil. The sandy loam and the fine sandy loam are mapped.

The Greenville series has reddish-brown to red surface soils and a bright-red to deep-red, rather compact, but friable subsoil. Only one type, the sandy loam, is developed in Crenshaw County.

The Blakely series is closely related to the Greenville series and differs from it mainly in that the soil and subsoil have a much darker red color. The Blakely soils appear to have a higher content of organic matter and possibly more manganese than the Greenville. One type, the Blakely loam, occurs in this county.

The Luverne series consists of types with gray to grayish-brown surface soils. The subsoil is a bright-red to deep-red, tough, compact, sandy clay, which in the lower part of the 3-foot section becomes more friable in structure and shades off into a yellowish-red color, normally slightly mottled with yellow. A noticeable proportion of finely divided mica flakes is present in the lower subsoil. The tough and compact structure of the subsoil differentiates this series from the Orangeburg. The fine sandy loam is mapped in the present area.

The soils of the Susquehanna series are characterized by brown to dull-red surface soils in the heavier types and gray to brownish gray in the sandy types. The subsoil is a dull-red, heavy, plastic clay, which

quickly grades into an intensely mottled, red, yellow, and gray, heavy, plastic clay. Two types, the fine sandy loam and clay, are developed here.

The Kirvin series includes types with dull-red to reddish-brown surface soils and a light-red or yellowish-red, compact and hard, but brittle subsoil, which in places is slightly mottled with bright yellow in the lower part of the 3-foot section and may contain a small amount of fine mica flakes. Only the clay loam is mapped.

The types of the Sumter series have brownish-yellow to yellowish-gray surface soils. The subsoil is pale yellow mottled with light gray or white, and usually grades into soft limestone at depths of 15 to 30 inches. The surface soil is calcareous and the subsoil is highly calcareous. The Sumter clay and two phases of it are mapped in this survey.

The Guin series represents soil conditions rather than definite types. In this area it embraces some of the roughest and most broken areas of the Susquehanna and Ruston soils so badly mixed that they could not be separated on the map.

Along the rivers and larger creeks are well-defined second bottoms or terraces which have been classed as the Kalmia and Myatt. In the first bottoms, which are subject to overflow, there are developed the Thompson, Ochlockonee, and Catalpa series, and also miscellaneous materials mapped as Meadow and Swamp.

The types of the Kalmia series have gray surface soils and a pale-yellow friable subsoil. In general these soils are the terrace equivalent of the Norfolk soils of the upland. The Kalmia fine sand and fine sandy loam are the only types mapped.

The Myatt series is associated with the Kalmia series. It includes types with dark-gray surface soils and a mottled yellow and gray, generally friable subsoil. The Myatt soils occupy slightly lower positions and are not as well drained as the Kalmia soils. The Myatt fine sandy loam is the only type developed in the present survey.

The Thompson series is not materially different from the Kalmia series, except that the types occur in first bottoms and are subject to frequent overflow. The Thompson fine sandy loam is mapped.

The Ochlockonee series includes types with brown surface soils and a light-brown or mottled brown and gray subsoil. The clay loam is mapped.

The types included in the Catalpa series have brown surface soils and a yellowish-brown to drab, heavy clay subsoil. These soils are calcareous, having been derived from material which has been washed from the calcareous Sumter clay. The Catalpa clay is the only type developed in this survey.

Meadow represents material in the first bottoms which is so variable in texture, color, and structure that no type distinction could be made.

Swamp includes those areas of first-bottom land which are permanently wet or covered with water throughout the year.

The soil types in Crenshaw County are described in detail in subsequent pages of this report. Their distribution is shown on the accompanying soil map. The table following shows the actual and relative extent of each soil type:

Areas of different soils.

Soil.	Acres.	Per. cent.	Soil.	Acres.	Per cent.
Ruston fine sandy loam	67,392	17.4	Greenville sandy loam	8,128	2.1
Susquehanna fine sandy loam	34,304	8.9	Norfolk sand	7,552	2.0
Meadow	33,984	8.8	Ochlockonee clay loam	6,592	1.7
Orangeburg fine sandy loam	32,704	8.4	Orangeburg sandy loam	5,504	1.4
Norfolk fine sand	29,440	7.6	Myatt fine sandy loam	5,504	1.4
Ruston sand	23,360	6.0	Swamp	4,096	1.1
Ruston sandy loam	21,312	5.5	Sumter clay	192	.8
Susquehanna clay	16,384	4.2	Mixed phase	1,600	
Thompson fine sandy loam	15,424	4.0	Eroded phase	1,280	
Guin soils (undifferentiated)	14,976	3.9	Catalpa clay	2,112	.5
Ruston loamy sand	14,656	3.8	Blakely loam	768	.2
Kalmia fine sand	13,376	3.5	Kirvin clay loam	576	.1
Luverne fine sandy loam	9,600	2.5			
Norfolk fine sandy loam	8,256	2.1	Total	387,200	.....
Kalmia fine sandy loam	8,128	2.1			

RUSTON SAND.

The surface soil of the Ruston sand consists of 6 to 8 inches of grayish-brown to brown sand. The subsoil is reddish-brown or dull-red sand, usually becoming slightly loamy below 30 inches. In the vicinity of Bullock the soil is reddish brown, underlain by a light yellowish red subsoil, and is a close approach to the Orangeburg sand. The type includes patches of Ruston sandy loam, such as those east and southeast of Host, too small to be shown on a map of the scale used in this survey.

The Ruston sand has the largest development of any of the sand types in the county. The largest areas are in the southeastern township, with a few small scattered bodies in the central, western, and southern parts of the county. The type has a wide range of topography, varying from nearly level to undulating and hilly. The hills and ridges usually have smooth well-rounded slopes. Some of the steeper slopes around the stream heads are unsuited to cultivation, but the greater part of the type can be cultivated. The drainage is good to excessive, but erosion has not been serious, as most of the steeper slopes are in forest. The open porous structure of the soil permits rapid absorption of water and therefore the run-off is not so rapid as on the sandy loam or fine sandy loam types.

About 40 per cent of the Ruston sand is under cultivation; the rest supports a growth of longleaf, loblolly, and shortleaf pine, blackjack oak, black oak, black gum, and hickory, with sedge grass and briers prominent among the smaller plants. The type is devoted to general farming, the principal crops being corn, peanuts, and velvet beans, with some cotton. Corn yields from 6 to 10 bushels per acre, Spanish peanuts about 25 bushels, and the Virginia Runner from 30 to 60 bushels. Velvet beans are planted with the corn and yield from one-fourth to three-fourths ton per acre, with an average of about one-half ton. When fertilized with 200 to 400 pounds of 8–3–3 fertilizer, cotton, in dry seasons, yields from 100 to 175 pounds of lint cotton, and occasionally one-half bale per acre. Although cotton is grown on most farms on this soil, it is not as profitable a crop as corn and velvet beans. Sorgo and Japanese cane give fair yields where fertilized. Sweet potatoes produce from 100 to 200

bushels per acre. Florida beggarweed is grown by a few farmers on this soil. This crop fits in well with corn and produces a good crop of hay after corn is laid by, yielding from 2 to 4 tons per acre. It is also a soil improver and has the power of reseeding itself.

Peaches grown on the Ruston sand usually have a good flavor, are juicy and highly colored, and are well suited to canning. Watermelons, cantaloupes, cucumbers, tomatoes, beans, peas, and several other vegetables do well on this soil, but require the liberal use of fertilizers. At present they are grown exclusively for home use.

This type does not produce as heavy yields as the sandy loam type, but its use for general farming could be extended with profit. Land of this type sells at $10 to $15 an acre.

RUSTON LOAMY SAND.

The surface soil of the Ruston loamy sand is a gray to grayish-brown sand, in places of relatively fine texture, passing at 6 or 8 inches into a brown to light reddish brown sand of similar range in texture, extending to an average depth of 15 inches. The subsoil is a reddish-yellow or light yellowish red loamy sand or loamy fine sand, which usually becomes heavier and approaches a sandy loam below 30 inches. The type includes areas of brown fine sand, underlain at 10 to 15 inches by a bright yellowish red loamy fine sand, as in the areas 1 mile north of Gum Spring School and 2½ miles north of Saville. These areas would have been mapped Orangeburg loamy fine sand had they been of sufficient extent to stand as a type.

The Ruston loamy sand is a type of moderate extent in Crenshaw County. It occurs in close association with the Ruston sand, Norfolk fine sand, and Ruston and Orangeburg fine sandy loams, and it includes small patches of these types. The largest areas are about 6 miles north of Luverne and 1 mile south of Honoraville, with a few small areas scattered throughout the central part of the county.

The surface is smooth to gently rolling, with some rolling land around the stream heads. The drainage is good and is excessive on the rolling areas, but the soil absorbs water readily and is more retentive of moisture than the Ruston sand.

The greater part of the Ruston loamy sand is under cultivation. It is a light, warm soil, and is devoted chiefly to corn, velvet beans, peanuts, and cotton, which produces slightly larger yields than obtained on the Ruston sand. The type is well suited to the production of peaches and pecans, and to melons, cucumbers, berries, and other truck crops. Probably a good grade of tobacco can be produced on this soil. With a proper system of crop rotation and fertilization the soil can be maintained in a condition to give good yields of the ordinary field crops. The soil is mainly in need of organic matter.

RUSTON SANDY LOAM.

In color of soil and subsoil and depth of soil the Ruston sandy loam is similar in practically every way to the next type described—the Ruston fine sandy loam. The main difference is in texture—that is, the sand particles of the sandy loam average slightly larger. This content of coarser sand renders both soil and subsoil more open and porous and makes the subsoil more friable. The type includes

several small bodies of gravelly sandy loam, as north of Rock Hill Church and east of Bradleyton. Where closely associated with the Orangeburg sandy loam it includes some patches of that type, as it was not always possible to draw accurate boundaries between the two.

The Ruston sandy loam is developed principally in the northwestern and southeastern parts of the county, with a few areas north of Dozier and east of Bradleyton. The largest continuous body lies north of Honoraville in T. 11 N., Rs. 16 and 17 E.

This type generally occupies higher country than the average of the Ruston fine sandy loam. The surface ranges from gently rolling to hilly and ridgy. The hills are usually smoothly rounded, and the ridges have gently rolling slopes, except at heads of lateral drainage ways, where they are steeply rolling. The surface and internal drainage is good to excessive. Erosion is not so pronounced on this type as on the Ruston fine sandy loam, owing to the more open and porous structure of both soil and subsoil and consequent greater absorption of the rainfall. Terracing is generally practiced on the rolling areas and steeper slopes.

About 30 per cent of the Ruston sandy loam is under cultivation. The more rolling areas and steeper slopes are in forest consisting principally of rosemary, longleaf and shortleaf pines, with some post oak, gum, and other hardwoods.

The same crops are grown, and the same methods of culture and fertilization are practiced on this type as on the fine sandy loam. The yields are slightly lower. Since the advent of the boll weevil the acreage devoted to cotton has decreased more on this type than on the Ruston fine sandy loam.

Farms on the Ruston sandy loam sell for $10 to $20 an acre, according to improvements, location, and the inclusion of other types.

RUSTON FINE SANDY LOAM.

The surface soil of the Ruston fine sandy loam in cultivated fields is a gray or grayish-brown to brownish-gray fine sand to loamy fine sand, passing at about 6 inches into a yellow or brownish-yellow loamy fine sand, which extends to an average depth of about 10 to 15 inches. The subsoil consists of a reddish-brown, reddish-yellow, yellowish-red, or dull-red, friable fine sandy clay. In places on the lower slopes and more poorly drained situations the subsoil is mottled with shades of gray, yellow, and brown. The surface soil of the uncultivated areas has a darker gray color to a depth of 2 to 4 inches, owing to an accumulation of vegetable matter, but this disappears after a few years of cultivation.

A few small areas on the crests of ridges, as east of Lapine, north and northwest of Honoraville, and near Surles, contain a noticeable admixture of small fragments of ferruginous sandstone, together with some rounded quartz gravel, scattered over the surface, though the proportion of such material is not large enough to make the soil a gravelly type.

The Ruston fine sandy loam is fairly uniform in color and texture, and also in depth of subsoil, except where erosion or transportation of material has taken place. The deeper surface covering is on the

more gentle slopes; the shallower on the steeper slopes or around stream heads where the surface covering has been thinned by erosion. In places the soil has been entirely removed, and the reddish-brown subsoil exposed. Such areas, locally known as "gall spots," are small. Their crop value is practically the same as that of the typical soil. The subsoil of the Ruston fine sandy loam is friable and readily absorbs and retains moisture. It is slightly more compact than that of the Orangeburg fine sandy loam, but not so heavy as that of the Luverne fine sandy loam. The type occurs in close association with these two types and includes small areas of both. The differentiation was difficult in places, and the boundary lines are in many instances arbitrarily placed.

The Ruston fine sandy loam is the most extensive type and one of the most important agricultural soils in the county. It occurs principally in the northern two-thirds of the county, with a few small scattered areas in the southern part. The largest areas are south of Lapine, west of Highland Home, east of Luverne, and in the vicinity of Black Rock.

The greater part of the Ruston fine sandy loam occupies gently rolling country, but there are areas of comparatively low hills and ridges and some, around stream heads, of rolling to steeply rolling surface. Much of the type has a surface favorable to the use of modern farm machinery. All areas are well drained, and on the steeper slopes the run-off is excessive. Here some erosion occurs. The subsoil is retentive of moisture, and crops seldom suffer from lack of moisture where the proper methods of farming are employed, and then only during periods of prolonged drought. Terracing is practiced on most farms, especially on the steeper slopes. Much of the terracing would be unnecessary and leaching and erosion would be greatly reduced if this soil were planted to cover crops, more organic matter incorporated in the soil, and the shallow or eroded spots plowed deeper.

The Ruston fine sandy loam is not valued quite so highly as the Luverne and Orangeburg soils for the general farm crops, although under the present system of management the yields are nearly as good as on those types. About 60 per cent of the type is under cultivation, and the rest supports a second growth of loblolly, longleaf, and shortleaf pine, with a scattering of oaks, gums, and hardwoods.

Cotton, corn, velvet beans, and peanuts are the principal crops and oats, cowpeas, sugar cane, potatoes, and vegetables the minor crops, grown for home use. Under boll-weevil conditions the yields of cotton vary greatly. The yield on tenant farms ranges from almost a failure to about one-fifth bale; the land owners and better farmers of the county, through selection of early-maturing varieties and liberal applications of commercial fertilizers, obtain yields of one-fourth to one-half bale or more in good seasons. Corn yields from 10 to 20 bushels per acre, the higher yields being obtained where commercial fertilizer is used. Very few farmers fertilize corn but depend on velvet beans to supply nitrogen and on the soil reserves for potash and phosphoric acid. The beans are grown with the corn, being planted either in the drill with the corn or given every third row. The average yield of beans is about one-half ton per acre. Peanuts range in yield from 30 to 60 bushels, in case of Virginia Runner, to

25 to 50 bushels for the Spanish variety. Greater yields and better quality can be obtained by liming and using acid phosphate. Sugar cane, cowpeas, and potatoes give fairly good yields.

The Ruston fine sandy loam is a soil well suited to the general farm crops. It is light, easy to till, and responds readily to good treatment. With proper management it may be brought to and maintained in a reasonably high state of productiveness.

Land of the Ruston fine sandy loam sells at $10 to $30 an acre, according to location and improvements. Near Luverne and along the Luverne and Montgomery highway farms sell at $20 to $30 an acre; away from the towns and main roads the ordinary price is $10 to $15 an acre.

NORFOLK SAND.

The Norfolk sand is similar in color and structure to the Norfolk fine sand next described. The separation is made on the basis of textural difference. The texture of the type varies from fine to coarse sand, but the average texture is that of a medium sand. The soil is more open and porous than the Norfolk fine sand.

The Norfolk sand has a limited development in the county. The principal areas are in the southeastern part of the county, east of Ellis School and north of Cool Springs Church, and along the southern boundary. Other areas lie north of Saville, south of Leon, and near Panola.

The topography varies from nearly level to rolling or sloping. The drainage is generally excessive, particularly upon the ridges, so that the soil is inclined to be droughty.

The same crops are grown on this soil as on the Norfolk fine sand, but the yields are generally lower than on the fine sand.

NORFOLK FINE SAND.

The Norfolk fine sand consists of a gray fine sand with a depth of 4 to 8 inches. The subsoil is a pale-yellow or yellow, loose fine sand. Where this type occurs upon ridges the surface soil is usually light gray and of a loose incoherent structure; on the lower lying areas it is darker and more loamy, the differences being due to a higher content of fine material and organic matter. The type includes small areas of Norfolk sand, as 1 mile northwest of Dozier and one-half mile northeast of Bradleyton.

On the north side of Conecuh River and Patsaliga Creek there are large areas of the type that are rather flat and have the appearance of stream terraces. They lie well above the stream, and there is some doubt as to whether the material is strictly alluvial in origin. Therefore it was considered best to classify it as Norfolk. On these areas the soil is more retentive of moisture and slightly more productive than on the hilly areas.

The Norfolk fine sand is developed principally to the east of Saville and on the northern escarpment of the Conecuh River and Patsaliga Creek. A few small bodies are scattered over the county. The type occupies hills, low ridges, gentle slopes, and nearly level areas. The drainage is good on the level and gently rolling areas and excessive on the hills and steeper slopes.

A very small proportion of the hilly country is under cultivation, while the greater part of the level and gently rolling land is tilled. The type was formerly covered with a growth of longleaf and shortleaf pine. Most of the merchantable timber has been removed, and a second growth, principally of pine, blackjack oak, and scrub oak, now occupies the wooded areas.

The Norfolk fine sand is a light soil, easy to till, and especially well adapted to truck crops, such as watermelons, cantaloupes, cucumbers, cabbage, and sweet potatoes. With the exception of cucumbers, these crops are not grown on a commercial scale at present. On most of the farms near the salting station at Dozier cucumbers occupy from 1 to 2 acres or more. With cooperative marketing, truck crops would no doubt prove more profitable than the general farm crops.

Since the advent of the boll weevil, corn, peanuts, and velvet beans have been the chief crops. Corn yields from 6 to 15 bushels, peanuts 20 to 60 bushels, and velvet beans about one-half ton per acre. Tobacco is grown on a few farms, producing a fair yield of leaf of excellent quality. Sugar cane gives fair yields of sirup of a uniformly mild flavor and light color. Sweet potatoes do especially well on this soil, yielding from 150 to 250 bushels per acre. The higher yields are obtained on land fertilized with barnyard manure or 400 to 600 pounds of a 9–3–3 commercial fertilizer. The Norfolk fine sand sells at $10 to $20 an acre.

NORFOLK FINE SANDY LOAM.

The surface soil of the Norfolk fine sandy loam is a gray fine sand or loamy fine sand, passing at 4 to 8 inches into a pale-yellow loamy fine sand, which usually extends to a depth of 10 to 15 inches. The subsoil is a yellow, friable, fine sandy clay. In some areas of this type, principally to the south and southwest of Black Rock in the western part of the county, the soil extends locally to a depth of 24 inches and is usually darker than typical, while the subsoil is mottled with gray, which is indicative of imperfect drainage. These areas have about the same agricultural value as the typical soil when adequate drainage is established.

The Norfolk fine sandy loam includes several areas of Norfolk sandy loam, as south of Host and west of Morgan School in the southeastern township of the county. These areas would have been separated had they been of sufficient extent.

This type occurs in a number of small, widely scattered areas and has a relatively small total area. The principal areas are in the southeastern township of the county, at Black Rock and west of Glenwood. The surface varies from flat to undulating and gently rolling, with some low, flat-topped ridges. In general the surface drainage and internal drainage are fairly good, but in the flatter areas and on some of the footslopes that receive seepage water from above, the soil is rather poorly drained.

About 40 per cent of the Norfolk fine sandy loam is under cultivation; the rest supports a growth of pine, with scattering oaks and gums. The native grasses do well and furnish fair pasturage for about 8 months of the year. The cultivated areas are devoted to corn, peanuts, velvet beans, sweet potatoes, sugar cane, and sorgo. Fair yields of these crops are obtained, especially where rotation of crops

and fertilization is practiced. Some tobacco is grown. The leaf is of good quality and the yields fair. Formerly cotton was one of the chief crops, but since the advent of the boll weevil the acreage of this crop has been greatly reduced. With the possible exception of cotton, this soil is well suited to all the general farm crops, fruit, and truck crops. The flat areas can be easily drained by tile or open ditches. The soil is capable of producing good crops when properly handled. Land of this type sells at $10 to $20 an acre.

ORANGEBURG SANDY LOAM.

The Orangeburg sandy loam is similar in practically every way to the Orangeburg fine sandy loam, except that it is coarser in texture—that is, the sand particles are larger. These render the surface soil more open and porous and make the subsoil slightly more friable. In the area about 2 miles northwest of Brantley the subsoil is compact but crumbly, while in an area near Salem Church and another 2 miles south of Beulah Church the subsoil is looser and more loamy in character than the average.

This type is inextensive in the county. It occurs mainly in a number of small irregular-shaped areas in the northwestern part of the county in T. 11 N., R. 16 E. Other small bodies are found in the southern part of the county, as northeast of Host and southeast of Longs Bridge along the county line.

The Orangeburg sandy loam occupies gently rolling to rolling country lying slightly higher than the surrounding soils. The surface drainage is good to excessive. There is less erosion on this type than on the Orangeburg fine sandy loam, probably because the more open and porous character of the soil and subsoil absorbs more of the rainfall. Terracing is practiced to some extent on the steeper slopes.

About 60 per cent of the Orangeburg sandy loam is under cultivation; the rest is in mixed forest of pines with scattered oaks and other hardwoods. Practically the same crops are grown, the same treatment is given the soil, both as regards cultivation and fertilization, as upon the Orangeburg fine sandy loam. The yields of some of the crops on the former are slightly lower; velvet beans, however, appear to give slightly higher yields.

Land of this type is sold in conjunction with the surrounding soils at $10 to $20 an acre, depending largely upon the improvements, the character of the other soils, and the distance from railroads.

ORANGEBURG FINE SANDY LOAM.

The surface soil of the Orangeburg fine sandy loam in cultivated fields is a brownish-gray fine sand to loamy fine sand, passing at about 6 inches into a brownish-yellow to light reddish yellow loamy fine sand, which extends to a depth of about 10 to 15 inches. Usually lying between this and the typical subsoil is an intergrade of a reddish-yellow, heavy, fine sandy loam. The subsoil is a bright-red, friable, fine sandy clay, which continues to a depth of 4 or 5 feet, where it commonly grades into a reddish-yellow fine sandy clay of more friable structure. In the forested areas the surface soil, to a depth of 4 to 6 inches, is a grayish-brown to light-brown loamy fine sand, and in places the upper inch or two contains a relatively large proportion of vegetable mold.

This type is fairly uniform in color, texture, and structure, except where erosion or transportation of material has taken place. The deepest surface covering is on the more gentle slopes, whereas on the steeper slopes part of the surface soil has been removed and in some places only 6 inches of soil overlies the subsoil. On a few eroded "gall spots" the red fine sandy clay is exposed or has a very shallow covering. In a few of the slight swales and depressions the surface soil is dark brown and the subsoil is dull red and in the lower part of the 3-foot section shows slight mottlings of yellow, gray, and rusty brown.

The Orangeburg fine sandy loam is one of the more extensive and important soils of the county. It has its greatest development in the central part, where it occupies rather broad and continuous areas. Some of the most prominent areas are in the vicinity of Luverne and to the north, east, and west of that town. Other large areas lie between the Patsaliga and Little Patsaliga Creeks and in the vicinity of Black Rock. Small isolated bodies are scattered through the southern part of the county, and one large area lies south of Honoraville.

The topography varies from almost level to undulating and gently rolling, and in places is slightly hilly near the stream heads. Practically all of this type is favorable for agriculture, and over a considerable part of it modern farm machinery can be used advantageously. All areas of the type are well drained, and on the steeper slopes the run-off in many places is excessive. Terracing is practiced on most of the slopes to prevent surface wash and gullying. Much of the terracing would be unnecessary if this land were planted to winter crops, more organic matter incorporated in the soil, and deeper plowing practiced on the shallow or eroded spots.

Probably 70 to 80 per cent of the Orangeburg fine sandy loam is cultivated. The rest supports a forest of longleaf and shortleaf pine, interspersed with oak, hickory, and gum. This type is considered one of the best general purpose soils in the county, and practically every crop common to the region is grown upon it.

The yield of cotton ranges from one-fifth to three-fourths bale per acre, with an average of about one-third bale. The largest yields are obtained by heavy applications of commercial fertilizers, by planting early-maturing varieties, and by thorough preparation and cultivation of the soil. About 200 pounds of 10–2–2 or 9–3–3 fertilizer or 200 pounds of cottonseed meal and acid phosphate mixed is commonly applied.

Corn yields 15 to 30 bushels per acre, the higher yields being obtained with a top dressing of about 100 pounds of nitrate of soda. Some fertilize the crop with 100 to 200 pounds of cottonseed meal and acid phosphate mixed in equal proportions. Velvet beans yield from one-third to 1 ton, with an average of about one-half ton per acre. The crop is planted in the corn and is not fertilized separately. Peanuts yield from about 40 to 70 bushels per acre, and a yield of 104 bushels per acre is reported from a field of this soil that had been heavily fertilized and limed. Sweet potatoes yield from 100 to 300 bushels per acre, the higher yields depending largely on the fertilizer applied. Sugar cane comprises two varieties, the ribbon and the Japanese cane. The larger acreage is in the latter. This

variety needs to be planted only once in 4 years, the succeeding crops coming up from the old roots. It is said to withstand drought better than the ribbon variety. The yields of sirup range from 100 to 200 gallons per acre, but much higher yields can be obtained by proper fertilization. Garden vegetables and truck crops do well. This is an excellent soil for peaches, although peach growing has not been developed on a commercial scale. There are a number of young orchards of pecans, ranging in size from 1 to 8 or 10 acres.

Under present conditions the Orangeburg fine sandy loam can be purchased at $20 to $30 an acre for the average farm, while the better improved farms with good buildings sell for about $50 an acre.

The Orangeburg fine sandy loam is a mellow and very easily tilled soil. It is sufficiently open and loose to permit of a good circulation of both air and water. It responds readily to good treatment, to the addition of organic matter in the form of barnyard manure or green-manure crops, and also to the application of commercial fertilizers.

GREENVILLE SANDY LOAM.

To an average depth of 6 to 8 inches the Greenville sandy loam consists of a medium-textured, reddish-brown sandy loam. The subsoil is a brick-red or dark-red, moderately compact and slightly sticky sandy clay, usually becoming heavier in the lower part of the 3-foot section. The depth of the surface soil varies from 3 to 15 inches, the shallower soil occurring on the rolling areas, where the sandy loam covering has been partly removed through erosion. The subsoil is rather uniform to a depth of several feet. The type occurs in close association with the Orangeburg and Ruston sandy loams and fine sandy loams and includes small bodies of those types.

The Greenville sandy loam includes several small areas of loamy sand, as on the west side of Little Patsaliga Creek west of Rutledge. The soil to an average depth of 18 to 24 inches is a brown to reddish-brown loamy sand, underlain by a dark-red, heavy loamy sand, which passes into sandy loam at 30 to 36 inches.

The type occurs principally in the central and northwestern parts of the county. The largest bodies are on the east and west sides of Little Patsaliga Creek, near Sal Soda School and Honoraville, northwest of Black Rock, and west of Fullers Crossroads.

The Greenville sandy loam occupies level to gently rolling uplands and plateaulike areas on stream divides. The structure of the soil and subsoil permits adequate internal drainage. The run-off is gradual and erosion negligible over most of the type, but on some of the steeper slopes it is more or less destructive. The soil has the capacity of storing a large amount of moisture and of giving it up gradually to the growing crops. However, under present methods of handling the soil the crops suffer during prolonged droughts. This can be overcome by deeper plowing and the incorporation of vegetable matter. The land should not be broken too deep at first, but there should be a gradual deepening of the soil from year to year, until the required depth is reached. The present method of breaking the land, as practiced by the average tenant, consists in turning the soil with a 1-horse plow which seldom runs deeper than 3 or 4 inches.

This is continued year after year until a plow-sole is often formed at this depth. Unless this compacted layer of soil is broken, crops are almost sure to suffer from drought.

The greater part of the Greenville sandy loam is under cultivation. It is particularly well adapted to cotton. It is capable of being built up to a high state of productiveness, and yields of one bale of cotton per acre were not uncommon before the advent of the boll weevil. At present (1921) where fertilized with about 400 pounds of a 9–3–3 mixture, average yields of about one-half bale per acre are obtained. Corn does fairly well if fertilized. Yields of 30 to 40 bushels are obtained by the better farmers, but the average yield seldom exceeds 15 bushels per acre. Velvet beans yield from one-third to one-half ton per acre, oats 20 to 35 bushels, and sweet potatoes from 150 to 250 bushels per acre. This soil is especially well suited to the production of peaches and pecans. Land of this type sells at $25 to $40 an acre.

BLAKELY LOAM.

The surface soil of the Blakely loam is a reddish-brown to dark-red loam, ranging in depth from about 6 to 10 inches and having a mellow structure. The subsoil, to a depth of 36 inches or more, is a very dark red to maroon-red, rather compact but friable clay, carrying a noticeable quantity of fine sand. In a few places the soil is a reddish-brown heavy fine sandy loam to a depth of about 5 inches. The dark color of this soil and subsoil is due to the presence of organic matter, together with a high percentage of manganese.

This type is small in extent and occurs in a few areas about 1½ miles south of Luverne on both sides of Beaver Branch, and in one area about three-fourths mile southwest of Luverne.

The Blakely loam has a gently rolling to gently sloping surface. The natural drainage is excellent, and the structure of the subsoil insures favorable moisture conditions for the crops.

All this type is under cultivation, being devoted to the production of cotton, corn, and velvet beans. The yields of cotton range from one-half to one bale per acre, the best obtained on any soil in the county. The yields of corn range from 15 to 40 bushels, with a possible average of 20 bushels per acre. Beans are planted with corn and yield from one-half to 1 ton per acre. Good yields of oats have been obtained on this soil in Georgia. This is naturally one of the strongest and most productive soils in the county. It can be plowed or cultivated soon after rains.

The table below gives the results of mechanical analyses of samples of the soil and subsoil of the Blakely loam:

Mechanical analyses of Blakely loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
416430	Soil, 0 to 10 inches	0.6	5.1	4.3	34.6	22.2	18.3	15.0
416431	Subsoil, 10 to 36 inches	.7	5.4	3.4	30.1	20.8	12.6	26.8

LUVERNE FINE SANDY LOAM.

The surface soil of the Luverne fine sandy loam is a light brownish gray to light-brown fine sand to loamy fine sand, passing at about 6 to 8 inches into a yellow, brownish-yellow, or reddish loamy fine sand, which extends to a depth of 10 to 15 inches. The subsoil is a dark-red to light-red, heavy, compact, slightly plastic clay, or fine sandy clay, which usually grades at about 10 to 24 inches into a yellowish-red, compact but friable fine sandy clay, mottled in places with bright yellow. The lower subsoil in many places carries finely divided mica, which in a measure gives it a more friable structure.

In a few places the surface soil is a brown to reddish-brown loamy fine sand, and the clay subsoil is within 6 or 8 inches of the surface and here and there a few "gall" or eroded spots, where the heavy clay loam or clay subsoil is exposed.

This type is developed chiefly in the central part of the county. The largest areas lie east and south of Luverne. Other areas are in the vicinity of Ivey Creek Church and north of Fosters Store. This type occurs in close association with the Orangeburg, Ruston, and Susquehanna fine sandy loams. It differs from the Orangeburg in the compact, slightly plastic, tough structure of the subsoil.

The Luverne fine sandy loam has an undulating, gently rolling to rolling surface. All of it is smooth enough to allow the use of improved farm machinery. The natural drainage is good. Terracing is practiced on the more rolling areas. By plowing deeper and growing cover crops much of this terracing could be eliminated. While there is erosion on some of the slopes, this erosion is fairly smooth—that is, no deep gullies have been formed as on some of the associated types.

At least 90 per cent of the Luverne fine sandy loam is cleared and under cultivation; the rest supports a growth of pines, together with some oak, hickory, black gum, and sweet gum.

Upon the Luverne fine sandy loam are grown all the general farm crops of the county. Under boll-weevil conditions cotton yields one-fifth to one-half bale per acre. Corn yields from 12 to 20 bushels; velvet beans when planted in corn every third row average about one-half ton per acre; and peanuts from 20 to 60 bushels per acre. Much larger yields are obtained on this soil where heavy applications of fertilizer or barnyard manure are made.

The Luverne fine sandy loam is considered one of the best soils in the county, being as strong or a little stronger than the Orangeburg fine sandy loam. It is slightly more retentive of moisture; the effect of this is especially noticeable in the appearance of the crops during dry seasons. This type is fertilized and handled in the same way as the Orangeburg fine sandy loam, and suggestions for the improvement of that type will apply equally well to this.

Land of this type sells at $20 to $50 an acre, depending on location and character of improvements; the higher price applies to land in the vicinity of Luverne.

The results of mechanical analyses of samples of the soil, subsurface, and subsoil of the Luverne fine sandy loam are given in the following table:

Mechanical analyses of Luverne fine sandy loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
416432	Soil, 0 to 6 inches	0.6	3.5	2.4	46.5	34.9	8.3	3.7
416433	Subsurface, 6 to 10 inches	1.0	3.7	2.6	46.1	32.1	10.8	3.7
416434	Subsoil, 10 to 36 inches	.5	1.3	.9	16.4	17.2	17.9	45.8

SUSQUEHANNA FINE SANDY LOAM.

The surface layer of 4 to 6 inches of the Susquehanna fine sandy loam is a gray, light brownish gray, or pale yellowish gray fine sand, passing into a yellow or pale-yellow fine sand which extends to a depth of 8 to 15 inches. The subsoil is normally a dull-red or brownish-red, heavy, sticky, plastic clay, which extends to a depth of 3 feet or more, the lower part being characteristically mottled with red, gray, yellow, and brown. When wet the subsoil is exceedingly sticky and plastic, and when dry very stiff, baking and cracking into small angular lumps. The change from soil to subsoil is abrupt.

There is considerable variation in the depth of the surface soil. On the steep slopes it is seldom more than 6 or 8 inches deep, but on the gentle slopes and nearly level areas it may extend to a depth of 18 to 20 inches. On some of the steep slopes that have been cultivated for a number of years the surface covering of fine sand has been entirely removed in places by erosion and the red clay subsoil exposed.

Variations in the character of the subsoil are common. The greater part of the type is apparently derived from the Buhrstone formation, a gray or greenish-gray, soft, noncalcareous rock, beds of which extend across the county. This rock outcrops in many places in thin ledges on the steeper slopes, and fragments are common over the surface. Where the bedrock comes within 3 to 5 feet of the surface, the subsoil is usually a red or finely mottled red, yellowish, or greenish, compact, plastic heavy clay, changing at depths of about 20 to 30 inches to more permeable and friable, but compact and brittle, greasy-feeling micaceous clay or very fine sandy clay.

The Susquehanna fine sandy loam is the second soil in extent in the county. It is developed principally in the south-central and southwestern parts of the county. Large areas lie south of Luverne, north and southeast of Brantley, and southwest of Pleasant Home.

The type occurs on valley slopes and to a less extent on ridges and divides, and the surface varies from gently sloping to rolling. The natural surface drainage is good, but the movement of soil water through the subsoil and the underlying formation is very slow. Many of the lower slopes are wet or moist for long seasons, owing to the accumulation of seepage waters. The porous surface soil absorbs water readily, but where the impervious subsoil is near the surface the run-off is comparatively large and results in considerable washing on slopes. In many places the mantle of fine sand has been entirely removed and gullies have been formed. Much of the type is inclined to be droughty owing to the low water-holding capacity of the heavy clay subsoil and the slow internal movement of moisture.

Probably not more than 30 per cent of the Susquehanna fine sandy loam is under cultivation. The rest supports a growth of pines, with some oaks and other hardwoods. Before the advent of the boll weevil, cotton was the chief crop. At present the type is used for the production of all the crops common to the region. Yields are only fair, being generally smaller than on the Orangeburg and Ruston soils, with which this type is closely associated.

The Susquehanna fine sandy loam sells at $10 to $25 an acre, the better price depending on improvements and kind and quality of timber.

SUSQUEHANNA CLAY.

The Susquehanna clay in most places has a surface covering of 2 to 4 inches of gray fine sand to very fine sand, but on the steeper slopes this covering has been removed. The type is apparently the result of erosion of areas of Susquehanna fine sandy loam. The subsoil is identical in every respect with that of the fine sandy loam, the two soils being derived from the same formation.

The largest areas of this type lie south of Luverne, north of Leon, and on the headwaters of Horse, Panther, and Piney Woods Creeks in the western part of the county. The topography varies from gently rolling to very rolling and hilly, with a few small nearly level areas. Surface drainage is good to excessive over most of the type. On account of the close, impervious structure of the subsoil, water moves through it very slowly. The soil is droughty, and the small streams invariably go dry during the hot season.

The intractable character of the Susquehanna clay is unfavorable to its use for crop production. It is nearly all in forest and a large part of it is owned by lumber companies. The forest consists of loblolly, longleaf, and shortleaf pines, post oak, blackjack oak, sweet and black gums, and some other hardwoods. The native grasses are principally broom sedge and other coarse grasses; lespedeza, paspalum, and carpet grass spring up in the cleared fields and furnish fairly good grazing.

The Susquehanna clay is best suited to forestry and pasture. The yields of cotton, corn, and other crops are very low.

This type sells at from $3 to $15 an acre, depending almost entirely on the character of the timber.

KIRVIN CLAY LOAM.

The surface soil of the Kirvin clay loam is either a reddish-brown clay loam to a depth of 4 or 5 inches or a light-brown to reddish-brown fine sandy loam to a depth of 1 to 4 inches. The subsoil is a dull-red to light-red, compact but brittle clay, which at about 12 to 15 inches commonly grades into a mottled light-red and yellow, compact, stiff, but brittle clay, which continues to a depth of 3 feet or more. Scattered over the surface and through the subsoil are small, brown, iron accretions and fragments of iron crust. These are most numerous on some of the knolls and ridges.

The Kirvin clay loam has a small development in Crenshaw County. It occurs in a few small bodies one-half mile east of Lapine and farther east along the Montgomery County line, and in

one body about 1 mile southwest of Kent Bridge. The surface varies from almost level to gently rolling, including some gradual slopes, a few low ridges, and some smooth rounded knolls. The natural surface drainage is excellent.

Most of this type is under cultivation, and the rest supports a growth of old field pine, gums, broom sedge, and briers. Cotton yields about one-fourth to one-third bale per acre where fertilized with 300 to 400 pounds of one-half cottonseed meal and one-half acid phosphate. The yields of corn are low.

The table below gives the results of mechanical analyses of samples of the soil, subsurface, and subsoil of the Kirvin clay loam:

Mechanical analyses of Kirvin clay loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
416440....	Soil, 0 to 3 inches.....	1.7	3.7	2.1	20.7	50.2	12.9	8.7
416441....	Subsurface, 3 to 12 inches..	.3	.8	.6	3.4	10.2	22.3	62.4
416442....	Subsoil, 12 to 36 inches....	.5	1.2	.5	1.7	5.4	29.5	61.3

SUMTER CLAY.

The surface soil of the Sumter clay consists of about 4 to 6 inches of brownish-yellow or greenish-gray to light-gray clay. The subsoil is a pale-yellow clay, which quickly passes into a mottled light-gray to whitish and yellow clay. In a few places the clay subsoil extends to a depth of 3 feet, but more commonly it grades into the substratum of Selma chalk at depths varying between 20 and 30 inches. Both soil and subsoil are calcareous, the subsoil being strongly so. The surface soil is sticky and very plastic when wet, but has a crumbly structure when dry; the upper subsoil is also heavy and plastic, while the lower subsoil is friable and is simply soft rotten limestone. In a few spots the white chalk rock has been exposed by erosion.

The Sumter clay has a very small development in Crenshaw County. It occurs in a few small bodies in the northwestern part of the county in T. 12 N., R. 17 E., on the north side of Beaver Dam Creek. The topography is almost level to gently rolling or gradually sloping, and the natural surface drainage is good. The internal drainage is hindered by the impervious structure of both soil and subsoil.

The Sumter clay has developed under prairie conditions. Nearly all of the type was under cultivation at one time, but now only a small part is farmed. This condition is due principally to the difficulty of obtaining good drinking water, the distance from town, and the lack of good roads. The type is used principally for the production of grasses for hay and pasturage. Johnson grass and melilotus are the principal grasses; they yield from 1 to 1½ tons of hay per acre. Cotton and corn are grown on a few patches.

The Sumter clay and the eroded phase and mixed phase of the type constitute the lime lands of the county. In other counties in Alabama the type is used to some extent for the production of alfalfa, to which

it is especially adapted. It is an excellent pasture soil and can be most profitably used for this purpose and for growing alfalfa. The type is sold in conjunction with the surrounding soils.

Sumter clay, eroded phase.—The Sumter clay, eroded phase, represents hilly, rough, and broken land badly gullied and eroded. Very little of this phase has a distinct soil or subsoil; most of it is simply the parent formation exposed through erosion. Shells and limestone fragments are scattered over the surface and embedded in the soil material.

This phase is confined to the extreme northwestern corner of the county, in T. 12 N., R. 17 E., where several areas have been mapped around the headwaters of the streams. In its present condition it is practically a nonagricultural soil, except for scant pasturage. Some small areas are smooth enough to be reclaimed for agriculture by filling the gullies with brush and seeding the slopes to sweet clover, lespedeza, Bermuda grass, or Johnson grass to check erosion.

Sumter clay, mixed phase.—The Sumter clay, mixed phase, represents Sumter clay and Oktibbeha clay in such small areas that the types could not be separated on a map of the scale used in this survey. The Oktibbeha clay consists of a dark-brown or reddish-brown heavy clay, underlain at 5 to 8 inches by an intensely mottled red, yellow, and gray, heavy, plastic clay, which is underlain within the 3-foot section by the Selma chalk formation.

The Sumter clay, mixed phase, is developed to a small extent in the extreme northwest corner of the county in close association with the Sumter clay and the Sumter clay, eroded phase. The surface is gently rolling to rolling. The natural surface drainage is good. A large part of this type occupies a position favorable for cultivated crops.

This phase is suited to the growing of cotton and corn, but it could be most profitably used as pasture and hay land, particularly in the more limy areas. At present very little of this land is under cultivation.

GUIN SOILS (UNDIFFERENTIATED).

The Guin soils (undifferentiated) comprise Norfolk sand and fine sand, Orangeburg sand, sandy loam, and fine sandy loam, Ruston sand, sandy loam, and fine sandy loam, and Susquehanna clay and fine sandy loam, so intricately mixed that no type could be separated on a map of the scale used. Included are small bodies of Susquehanna clay, south of Merrill Mill, and on the southern border of Patsaliga Creek and Conecuh River are spots of Susquehanna clay and fine sandy loam. In the northwestern part of the county small areas of limy material are included.

There are about 23 square miles of this material in the county. Some areas lie in T. 12 N., R. 17 E., in the northwestern part of the county, in close proximity to the prairie lands. Important areas are mapped along the headwaters of Mack Creek south of Brantley, along the Conecuh east of Brantley, and others on the southern escarpments of Patsaliga Creek and Conecuh River in the southeastern part of the county.

The surface features of the Guin soils (undifferentiated) consist of a series of rough broken hills and deeply eroded areas. The streams

have cut deep and very narrow valleys, and erosion is responsible for the broken topography and the extremely mixed or varied character of the surface soils. Drainage is excessive and erosion is still very active. It is practically impossible to reclaim this land for agriculture at reasonable cost. In its present condition it is nonagricultural, except for a few spots of an acre or two here and there. It would furnish scanty grazing for cattle, but would make fairly good pasture for goats.

The greater part of the Guin soils (undifferentiated) is now forested with longleaf, shortleaf, and rosemary pines, together with oaks, hickory, and other hardwoods. Much of the merchantable timber has been removed, but the land has reseeded to a second growth of these trees. The most profitable use of the land is for forestry. The value of the land is determined by the quantity and character of the merchantable timber now standing, and the price at which the land can be purchased ranges from $3 to $10 an acre.

KALMIA FINE SAND.

The Kalmia fine sand of the terraces corresponds to the Norfolk fine sand of the upland. It is similar in color and texture of the soil and the subsoil, and differs from the upland type in that the material is alluvial. The type is possibly not so well drained as a whole as the Norfolk fine sand. In some of the slight swales and flatter areas the lower subsoil is commonly somewhat mottled with gray and rusty brown.

Included with the Kalmia fine sand are several small bodies of the sand type, as at Dozier, 1 mile southwest of Searight, and on the east side of Little Patsaliga Creek west of Rutledge.

The Kalmia fine sand is mapped along the larger streams of the county. It represents old alluvium brought down by the streams from the surrounding uplands and deposited along their courses when they flowed at higher levels. The type generally lies well above normal overflow. Some of the more prominent bodies are west of Luverne, at Dozier, and north of Merrill Mill on the Patsaliga Creek. The topography is nearly level or undulating, or slopes gently toward the streams. Drainage is good over most of the type, and the swales and depressions, in which there is excess moisture can easily be reclaimed by ditching.

The principal crops grown on the Kalmia fine sand are corn, peanuts, and velvet beans. Fair yields are generally obtained. Farmers on this soil near Dozier for the past few years have produced cucumbers for the salting station at that place. Sugar cane gives fair yields of sirup of a light color and a uniformly fine flavor. Tobacco is grown on a commercial scale on a few farms. The tobacco is of good quality when properly handled. Yields of 600 to 1,000 pounds per acre are obtained where fertilized with 600 to 800 pounds of a mixture of one-half cottonseed meal and one-half acid phosphate.

This soil is especially desirable for growing small fruits and vegetables, including strawberries, cucumbers, watermelons, beans, and potatoes.

Land of this type sells at from $10 to $20 an acre, depending on location and character of improvements.

KALMIA FINE SANDY LOAM.

The surface soil of the Kalmia fine sandy loam consists of 8 to 10 inches of dull-gray or brownish-gray fine sand. The subsoil is a pale-yellow or yellow loamy fine sand or friable fine sandy clay to a depth of 24 to 30 inches, below which it becomes lighter in color and heavier in texture and is mottled gray and yellow, particularly where the drainage is not well established.

A few small areas of Kalmia fine sand are included with this type, and also several small bodies of Cahaba fine sand and fine sandy loam. The Cahaba soils have brown or grayish-brown soils and a light-red or yellowish-red sandy clay subsoil. While the Cahaba soils have a slightly higher agricultural value than the Kalmia, they were included with this type on account of the small acreage.

The Kalmia fine sandy loam has a total area of about 13 square miles. It represents material brought down by the streams and deposited along their courses when they flowed at a higher level. It is developed on the Conecuh River and Patsaliga Creek and some other streams of the county and generally lies well above normal overflow. The surface varies from nearly level to very gently sloping and undulating. Drainage is prevailingly good, except in some of the slight depressions, which can be easily drained by ditching.

This type is suited to most of the general farm crops. It withstands drought well and is easy to cultivate. About 50 per cent of it is under cultivation; the rest is in pasture and forest. Corn and velvet beans are the chief crops. Corn yields from 10 to 20 bushels, and velvet beans about one-half ton per acre. Cotton formerly averaged about one-fourth bale. Sugar cane does well and produces a sirup of a bright color and excellent flavor. Lespedeza, carpet grass, and paspalum do well on this type and furnish good summer and fall pasture. The Kalmia fine sandy loam is an early soil and well suited to fruits and garden vegetables.

MYATT FINE SANDY LOAM.

The Myatt fine sandy loam consists of about 6 to 8 inches of a gray or dingy-gray fine sand, generally mottled with light gray and rusty brown. The subsoil is a gray or pale yellowish gray, moderately heavy and sticky fine sandy clay, mottled with gray, yellow, and rusty brown. In places the soil extends to a depth of 20 to 30 inches, where it passes into a loamy fine sand.

The type includes small bodies of Plummer fine sandy loam and Leaf fine sandy loam. The Plummer fine sandy loam is similar to the Myatt fine sandy loam except in derivation, while the Leaf fine sandy loam has the same derivation as the Myatt, but has a slightly heavier subsoil showing some red mottling with the gray, yellow, and rusty-brown mottling typical of the latter. These soils are locally referred to as "crawfish flats."

The largest areas of Myatt fine sandy loam are on the north side of Conecuh River between Brantley and Searight and along Piney Woods Creek from its source to its confluence with Patsaliga Creek. The surface is flat to very gently sloping. Drainage is very poor.

The Myatt fine sandy loam is inextensive, occupying less than 9 square miles. The type is not cultivated. Some of it has been cleared and used for pasture. In its present condition it is best suited for pasture and forestry.

THOMPSON FINE SANDY LOAM.

The surface soil of the Thompson fine sandy loam has an average depth of 6 or 8 inches and is a gray, dark-gray, or grayish-brown fine sand to loamy fine sand. The subsoil is a yellow or yellowish-gray, friable fine sandy clay, usually mottled below 30 inches with gray and rusty brown. Both the soil and subsoil are variable in color, texture, and structure. Along the two largest streams of the county the type is closely associated with the Ochlockonee clay loam and includes patches of that type. In many places the soil is a heavy fine sandy loam or loam with a slightly heavier subsoil than typical. The type also includes several small areas of Thompson fine sand, as south of Brantley, which were not of sufficient importance to be mapped separately.

The Thompson fine sandy loam occupies first bottoms along the larger streams of the county. The largest areas are along the Conecuh River and Patsaliga, Blue, Dry, and Piney Woods Creeks. The topography generally is flat and the natural surface drainage is slow and imperfect. The low position of the type makes it subject to floods at any season of the year, although it seldom remains under water longer than two or three days at a time. Cultivation is possible without ditching, though canals and ditches would be beneficial.

Along the larger streams the type is an important bottom-land soil. About 10 per cent of the land on the smaller creeks is under cultivation, while probably not more than 2 per cent of the land on Patsaliga Creek and Conecuh River is farmed. The uncleared areas support a growth of water oak, swamp post oak, white oak, hickory, sweet and black gums, tupelo gum, cypress, ash, beech, ironwood, elm, willow, birch, sycamore, and other hardwoods, with some water palmetto, briers, switch cane, and other undergrowth.

Corn, sorghum, sugar cane, and native hay grasses are the principal crops. Corn yields from 15 to 30 bushels per acre. Velvet beans are usually planted in the corn and yield from one-half to 1 ton per acre. Sugar cane yields from 200 to 500 gallons of sirup of bright color and a desirable flavor. Johnson grass and other hay crops yield from 1 to 2 tons. The cleared areas furnish good grazing for cattle, while the wooded sections produce a heavy crop of mast that is excellent forage for hogs.

The Thompson fine sandy loam is a productive soil, but on account of frequent overflows it is used chiefly for forest and pasture. With the straightening of stream channels, ditching and diking, much of the land could be safely farmed, as overflows during the growing season are rare and of short duration.

Land of this type sells at $10 to $30 an acre, depending largely on the stand and character of the timber.

OCHLOCKONEE CLAY LOAM.

The surface soil of the Ochlockonee clay loam consists of 6 or 8 inches of dark grayish brown or brown clay loam, usually mottled below 2 or 3 inches with streaks of rusty brown. The subsoil is a brown clay loam or clay, normally slightly mottled below 18 inches with gray and rusty brown. There is considerable variation in the surface material. In some places it has a high content of organic matter; in others it has the texture of fine sandy loam or of clay. Included with the type are some areas of Thompson fine sandy loam.

The type is developed on the three main streams of the county and along a few small streams in the northwestern township. The largest bodies are west of Rutledge, east and south of Glenwood, north and west of Longs Bridge, and southeast and southwest of Brantley. It is an alluvial soil, occupying the first bottoms, and represents materials washed from the uplands and deposited along the streams during periods of overflow. The surface is flat to very gently undulating. The drainage is slow and, especially in the swales, imperfect.

The Ochlockonee clay loam comprises only about 10 square miles, and probably not more than 10 per cent of it is under cultivation. It is an excellent soil for corn, hay, and grasses. Corn produces from 20 to 40 bushels, with sometimes even higher yields in the most favorable seasons. Johnson grass yields from 1½ to 3 tons of hay per acre. A luxuriant growth of native grasses, such as Johnson grass, lespedeza, Bermuda grass, and carpet grass, with some Dallas grass, affords excellent grazing for cattle in the open fields. The wooded areas furnish good fall pasture for hogs, also fair winter pasture for cattle where there is a growth of switch cane. The forested land supports a rather dense growth of water-loving trees common to the bottom lands. In Crenshaw County the Ochlockonee clay loam is valued chiefly for timber, pasture, and the production of corn and hay.

CATALPA CLAY.

The surface soil of the Catalpa clay has a depth of about 6 to 10 inches and consists of a dull-gray to brown heavy clay, which is very sticky when wet, but crumbles into small granules when dry. The subsoil to a depth of 3 feet or more is a yellowish-brown or drab, heavy, sticky sandy clay, which locally shows mottlings of gray, yellow, and brown in the lower part. The surface soil is usually highly calcareous and the subsoil is calcareous in places.

This soil is confined to a few long narrow strips in the first bottoms of the streams flowing through or heading in the prairie regions in the northwestern part of the county. The largest area lies along Beaver Dam Creek, and a few narrow strips are found along some of the other small streams.

The Catalpa clay represents material washed from areas of Sumter clay, together with an admixture of materials from the adjacent uplands. It is subject to overflow, but usually crops are fairly safe. Although most of it lies only about 2 or 3 feet above the normal water level of streams, it is fairly well drained.

Practically all of this soil is used for growing corn and Johnson grass. The only tree growth consists of willow, cottonwood, sycamore and a few shortleaf pines along stream banks or near the streams. Corn yields from 20 to 40 bushels per acre without the use of ferti-

lizer, and Johnson grass 1½ to 2½ tons of hay per acre. This is one of the best soils in the county for these crops, and it should continue to be devoted to their production.

MEADOW.

Meadow includes material in the first bottoms which is so variable in color, texture, and structure that no type name could be assigned to it. It ranges in color from light gray, reddish, to dark gray; in texture from sand, fine sand, or fine sandy loam to clay loam or clay; and in structure from loose sandy material to compact and heavy material.

Meadow has a general distribution throughout the county. It occurs in long narrow strips along practically every branch and small creek, and even along some of the larger creeks. It is developed in the first bottoms and represents material which has been washed recently from the surrounding uplands and deposited along these streams at times of heavy rainfall. It is subject to frequent overflows, as much of it lies only a foot or so above the normal water level of the streams, and a large part of it is saturated with water during the greater part of the year.

Very little of the Meadow is cleared and used for crop production. On this cleared land patches of sugar cane and corn are grown, and fairly good yields of these crops are obtained. The chief value of Meadow is to supply summer pasturage for cattle. The principal forest growth consists of sweet gum, together with bay, some oak, hickory, and shortleaf pine.

Much of the Meadow could be drained and reclaimed for cropping by straightening and deepening the stream channels, and by cutting lateral ditches, and a ditch at the base of the slope of the upland to take care of the seepage waters. When this is done some of this Meadow will produce good yields of sugar cane, sorgo, corn, and hay.

SWAMP.

Swamp differs from Meadow in that it is covered with water or is saturated throughout the year and is darker in color, having a higher content of organic matter. The one area of Swamp in the county lies in the first bottoms along Patsaliga Creek, beginning west of Luverne and extending down the stream for a distance of 6 or 7 miles. Throughout this Swamp there are no definite stream channels, particularly for the branches and creeks entering the Patsaliga.

In its present condition the Swamp has no value for farming, but it supports a stand of valuable timber. The principal growth is cypress, but there is considerable water oak, willow oak, and gum. In many places there are water palmettoes, lilies, and mosses, which constitute the undergrowth.

SUMMARY.

Crenshaw County is situated in the southern part of Alabama. It comprises an area of 605 square miles, or 387,200 acres.

The population of the county is 23,017, all of which is rural. Luverne and Brantley are the largest towns in the county.

Transportation is furnished by the Central of Georgia Railway, which passes through the southeastern part, and by a branch line of the Atlantic Coast Line that extends from Luverne north to Montgomery.

The climatic conditions favor a diversified agriculture. The mean annual rainfall is ample for maturing all crops. A long growing season favors crop rotation.

Cotton, corn, velvet beans, and peanuts are the principal crops, with cowpeas, potatoes, oats, and sugar cane as secondary crops grown chiefly for home use.

Montgomery and Andalusia are the principal markets for the products of the county.

Twenty-two soil types, with two phases, and in addition the Guin soils (undifferentiated), Meadow, and Swamp, are mapped in the county. The Ruston, Norfolk, Orangeburg, Greenville, Blakely, Luverne, Susquehanna, Kirvin, Sumter, Kalmia, Myatt, Thompson, Ochlockonee, and Catalpa soil series are represented.

Four types of the Ruston series are mapped—the sand, loamy sand, sandy loam, and fine sandy loam. The fine sandy loam and sandy loam, the most productive types, are best suited to cotton and the other general farm crops. The sand and loamy sand are valuable types for the production of corn, cowpeas, peanuts, velvet beans, and certain fruits and early truck crops.

The Norfolk series is represented by three types—the sand, fine sand, and fine sandy loam. The first two named are well suited to truck growing. The fine sandy loam gives very good yields of the staple crops adapted to the region.

Of the Orangeburg series, two types were mapped—the fine sandy loam and sandy loam. These types are good general farming soils and are well adapted to peaches, a crop not grown commercially.

The Greenville sandy loam is well adapted to the production of cotton and gives good yields of the other staple crops.

The Blakely loam comprises only a small acreage but is one of the strongest upland soils in the county. It is especially adapted to cotton.

The Luverne fine sandy loam is possibly a little stronger soil than the Orangeburg fine sandy loam and gives good yields of the staple crops.

The Susquehanna series is represented by the fine sandy loam and the clay. The fine sandy loam is best suited to cotton; the clay has value as a forest and pasture type.

The Kirvin clay loam, which is inextensive in this county, is only moderately productive.

The best use for Sumter clay, including the eroded phase and the mixed phase, is for pasture and hay land. Alfalfa will do well on smooth areas.

The Guin soils (undifferentiated) cover areas of patchy soil development. They are best suited for use as pasture and forest land, owing to their hilly, broken topography.

The Kalmia series is represented by the fine sand and fine sandy loam. These types are particularly well adapted to corn, peanuts, cowpeas, velvet beans, tobacco, and watermelons, cucumbers, potatoes, and other truck crops.

The Myatt fine sandy loam occupies flat, poorly drained second bottoms. It is best suited to pasture and forestry.

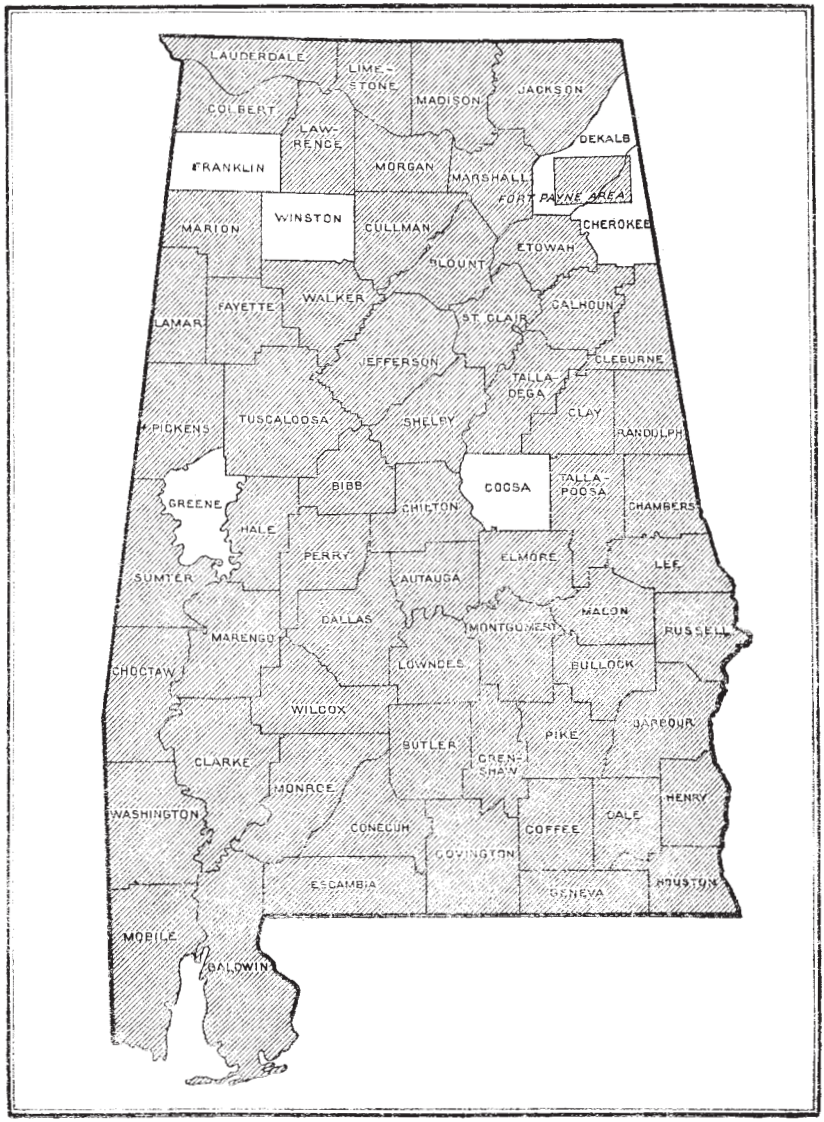
The Thompson fine sandy loam and the Ochlockonee clay loam are alluvial soils subject to annual overflow. When cleared they

are best suited to the production of corn, sorgo, sugar cane, hay, and pasture.

The Catalpa clay is a calcareous first-bottom soil. It is especially well suited to corn and hay crops.

In general the soils of Crenshaw County are fairly productive. They are adapted to a wide variety of crops and therefore favor diversified farming. The county offers excellent opportunities in the way of low-priced lands to prospective home seekers.

○



Areas surveyed in Alabama, shown by shading.

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U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF SOILS
IN COOPERATION WITH THE
ALABAMA DEPARTMENT OF AGRICULTURE
AND INDUSTRIES

SOIL MAP

ALABAMA
CRENSHAW COUNTY SHEET

Soils surveyed by J. F. Stroud, of the Alabama Department of Agriculture and Industries, in charge, and L. R. Schoenmann, Howard C. Smith and C. B. Manifold of the U. S. Department of Agriculture.

A. Hoen & Co. Lith. Baltimore, Md.

Scale 1 inch = 1 mile

Field Operations
Bureau of Soils
1921